

PATENT
TS1460 (US)
CML:EM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re application of)	
)	
DIERICKX, Jan Lodewijk Maria, et al.)	Confirmation No.: 8169
)	
Serial No. 10/561,477)	Group Art Unit: 1797
)	
Filed December 21, 2005)	Examiner: Brian A. McCaig
)	
PROCESS TO PREPARE)	December 29, 2009
A FISCHER-TROPSCH PRODUCT)	
)	

COMMISSIONER FOR PATENTS
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF

Applicants hereby submit this appeal brief in order to appeal the final rejection of claims 1-6 and 8-12 in the Office Action mailed July 31, 2009. Please charge any fees that are necessary in connection with this appeal brief to Shell Oil Company Deposit Account No. 19-1800.

Real Party in Interest

The real party in interest is Shell Oil Company.

Related Appeals and Interferences

To the best of the undersigned's knowledge, there are no related appeals or interferences.

Status of Claims

Claims 1-6 and 8-12 are currently pending and are on appeal. Claim 7 was previously canceled.

Status of Amendments

No amendments to the claims have been filed since the final Office Action.

Summary of Claimed Subject Matter

The application currently contains one independent claim. The invention as set forth in claim 1 is directed to a process to prepare a waxy raffinate product, which process comprises two steps. The invention is illustrated by Example 1 in the specification. In the first step, a Fischer-Tropsch derived product having a weight ratio of compounds boiling above 540°C and compounds boiling between 370 and 540°C of greater than 2 is subjected to a hydroconversion step. The hydroconversion step is discussed at page 4, line 29, to page 6, line 31. The particular Fischer-Tropsch derived product having the specific ratio of compounds, is discussed at page 3, lines 5-19 and on page 4, lines 14-28. The second step of the process involves fractionating the effluent of the first step to obtain products boiling in the fuels range and a waxy raffinate product boiling between 350 and 600°C. This step is discussed at page 2, lines 5-7 of the specification.

Grounds of Rejection to be Reviewed on Appeal

In the Final Office Action, claims 1-5 and 9-11 were rejected under 35 U.S.C. 102(e) as being anticipated by Hoek (WO2004/009739).

Claims 6, 8 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hoek as evidenced by Adams et al. (WO2004/007647).

Claims 8 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hoek in view of Murphy et al. (WO1999/41335).

Argument

Rejection of claims 1-5 and 9-11 under 35 U.S.C. 102(e) over Hoek

In the Office Action, claims 1-5 and 9-11 were rejected under 35 U.S.C. 102(e) as being anticipated by Hoek. As noted by the Examiner in the Office Action, Hoek does not explicitly

disclose that the Fischer-Tropsch derived product has a weight ratio of compounds boiling above 540°C and compounds boiling between 370 and 540°C of greater than 2. Accordingly, Applicants submit that Hoek does not anticipate the invention of claim 1 because there is no express teaching of this element of the claim. Additionally, this feature would not be inherent within Hoek because different feeds can have different ratios. In order for something to be inherent, it must inevitably be present. As demonstrated by the examples, it is possible to have feeds with weight ratios both above and below the ratio of 2 that is set forth in claim 1.

In the Office Action, the Examiner argued that the ratio is inherent in the process since Hoek uses the same Fischer-Tropsch feed as the Applicant citing page 4, lines 33-34 of Hoek referencing Geerlings et al. See paragraph 7 of the Office Action.

However, while both the present invention and Hoek can start with the same Fischer-Tropsch product, there is a difference between the processes. As set forth on page 3, lines 5-19 of the specification, the feed for the present invention may be prepared by separating from the Fischer-Tropsch synthesis product (i.e. the Geerlings product) part or all of the paraffin fraction boiling between 370 and 540°C and/or adding a Fischer-Tropsch derived fraction comprising compounds boiling above 540°C to the Fischer-Tropsch synthesis product. This is how the ratio of compounds boiling above 540°C and compounds boiling between 370 and 540°C is adjusted to be greater than 2. This is discussed in even greater detail on page 4, lines 14-28 of the specification in which it is stated that when a product such as Geerlings (WO-A-9934917) is used in the process of the invention, less of the 370 to 540°C fraction has to be separated from the Fischer-Tropsch synthesis product and/or less additional 540°C+ material has to be added to obtain the same desired weight fraction.

Accordingly, Applicants submit that the present invention is not anticipated by Hoek as alleged by the Examiner. The present invention requires a specific ratio which is not disclosed in Hoek.

Inasmuch as the remaining claims all depend either directly or indirectly from claim 1, Applicants submit that they would not have been anticipated for the same reasons.

Rejection of Claims 6, 8 and 12 under 35 U.S.C. 103(a) over Hoek and Adams

Inasmuch as claims 6, 8 and 12 all depend either directly or indirectly from claim 1, Applicants submit that they would not have been obvious over the combination of Hoek and Adams for the reasons set forth above with respect to the rejection of claim 1 over Hoek.

Rejection of Claims 8 and 12 under 35 U.S.C. 103(a) over Hoek and Murphy

Inasmuch as claims 8 and 12 both depend either directly or indirectly from claim 1, Applicants submit that they would not have been obvious over the combination of Hoek and Murphy for the same reasons discussed above with respect to the rejection of claim 1 over Hoek.

Applicants further submit that the invention of the present application would not have been obvious over the cited references because of the surprising and unexpected results obtained from the claimed invention. In Example 1 in the specification, a feed according to the invention having a ratio of 3.1 is compared to a feed having a ratio of 1.9 which is less than the claimed ratio. The results of the comparison are set forth in Table 2. Essentially the same amount of product boiling below 370°C is obtained. However, the desired, high value fraction, boiling between 370 and 540°C is 21.8 according to the invention rather than 20.4 which comprises an increase of 7 percent. Additionally, the properties of the waxy raffinate are better in the example according to the invention as the pore point and the cloud point are lower. Thus, further processing will be easier (to get the same base oil properties) or, when the further processing is the same, a better base oil product will be obtained. Accordingly, by following the teachings of the present invention, a more valuable product having better properties is obtained.

Conclusion

Based on the foregoing arguments, Applicants assert that that claims of the present application are not anticipated nor would they have been obvious in view of the cited references. It is respectfully requested that this appeal be upheld and that the application be sent back to the Examiner for allowance.

Respectfully submitted,

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CLAIMS APPENDIX

1. A process to prepare a waxy raffinate product, the process comprising:
 - (a) subjecting a Fischer-Tropsch derived product having a weight ratio of compounds boiling above 540 °C and compounds boiling between 370 and 540 °C of greater than 2 to a hydroconversion step and
 - (b) fractionating the effluent of step (a) to obtain products boiling in the fuels range and a waxy raffinate product boiling between 350 and 600 °C.
2. The process of claim 1, wherein the weight ratio of compounds boiling above 540 °C and compounds boiling between 370 and 540 °C is greater than 2.5.
3. The process of claim 1, wherein the T10wt% recovery point of the Fischer-Tropsch derived product is below 400 °C.
4. The process of claim 1, wherein the Fischer-Tropsch derived product in step (a) is prepared by separating from a Fischer-Tropsch synthesis product part or all of the paraffin fraction boiling between 370 and 540 °C.
5. The process of claim 1, wherein the Fischer-Tropsch derived product in step (a) is prepared by adding a Fischer-Tropsch derived fraction comprising compounds boiling above 540 °C to a Fischer-Tropsch synthesis product.
6. The process of claim 1 further comprising
 - (i) subjecting part of a Fischer-Tropsch synthesis product to a hydrogenation step to remove oxygenates and olefins from the Fischer-Tropsch product;
 - (ii) isolating from the hydrogenated Fischer-Tropsch product two or more wax grades, wherein at least one grade has a congealing point between 30 and 80 °C and at least one heavy grade has a congealing point of above 90 °C; and,
 - (iii) mixing part or all of the heavy wax with another part of the Fischer-Tropsch synthesis product to obtain the Fischer-Tropsch product having a weight ratio of compounds boiling above 540 °C and compounds boiling between 370 and 540 °C of greater than 2 to be used in step (a) wherein two or more grades of a paraffin wax having a congealing point ranging from 30 °C to 120 °C and a waxy raffinate product are prepared simultaneously.
7. (Canceled)

8. The process of claim 1, further comprising subjecting the waxy raffinate to a dewaxing step.
9. The process of claim 2, wherein the T10wt% recovery point of the Fischer-Tropsch derived product is below 400 °C.
10. The process of claim 2, wherein the Fischer-Tropsch derived product in step (a) is prepared by separating from a Fischer-Tropsch synthesis product part or all of the paraffin fraction boiling between 370 and 540 °C.
11. The process of claim 2, wherein the Fischer-Tropsch derived product in step (a) is prepared by adding a Fischer-Tropsch derived fraction comprising compounds boiling above 540 °C to a Fischer-Tropsch synthesis product.
12. The process of claim 2, further comprising subjecting the waxy raffinate to a dewaxing step.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.